

Appl. No.: 10/632,359
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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A motion encoder for determining rotational movement of a rotatable member comprising an element providing multiple sets of electromagnetic radiation transmissions, each set comprising a plurality of areas having respectively different electromagnetic radiation transmission characteristics for onward transmission of different amounts of electromagnetic radiation respectively, the areas being arranged to provide a directionally unique sequence of transmission characteristics along a path traced on rotation of the rotatable member, wherein the areas comprise surfaces on the element, and wherein the sets form multiple repetitive sequences about the element.

2. (Previously presented) A motion encoder according to claim 1 further comprising a source of electromagnetic radiation for directing the radiation towards the element and a detector for sensing the onward transmission of the electromagnetic radiation from the element.

3. (Currently amended) A motion encoder for determining rotational movement of a rotatable member comprising:

an element providing multiple sets of electromagnetic radiation transmissions, each set comprising a plurality of areas having respectively different electromagnetic radiation transmission characteristics for onward

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transmission of electromagnetic radiation, the areas being arranged to provide a directionally unique sequence of transmission characteristics along a path traced on rotation of the rotatable member, and wherein the sets form multiple repetitive sequences about the element;

a source of electromagnetic radiation for directing the radiation towards the element;

a detector for sensing the onward transmission of the electromagnetic radiation from the element,

wherein the detector is located for rotation with the rotatable member.

4. (Currently amended) A motion encoder for determining rotational movement of a rotatable member comprising:

an element providing multiple sets of electromagnetic radiation transmissions, each set comprising a plurality of areas having respectively different electromagnetic radiation transmission characteristics for onward transmission of electromagnetic radiation, the areas being arranged to provide a directionally unique sequence of transmission characteristics along a path traced on rotation of the rotatable member, and wherein the sets form multiple repetitive sequences about the element;

a source of electromagnetic radiation for directing the radiation towards the element;

a detector for sensing the onward transmission of the electromagnetic radiation from the element,

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wherein the source is located for rotation with the rotatable member.

5. (Original) A motion encoder according to claim 1 wherein the characteristics are reflection characteristics.

6. (Previously presented) A motion encoder according to claim 1 wherein the areas comprises three different ones of the characteristics that are repeated in a same order on a surface of the element.

7. (Previously presented) A motion encoder according to claim 1 wherein the rotatable member is movable in an axis perpendicular to a plane of rotation of the rotatable member.

8. (Cancelled)

9. (Previously presented) A motion encoder according to claim 1 wherein the surfaces comprise different reflective surfaces.

10. (Cancelled)

11. (Previously presented) A motion encoder according to claim 1 wherein the surfaces comprise partially transparent surfaces.

12. (Cancelled)

13. (Previously presented) A motion encoder according to claim 1 wherein the areas comprise a substantially same size.

14. (Previously presented) A mobile communications device comprising a display on a front face of the device and a user input, wherein the user input comprises a source of

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electromagnetic radiation, a detector for sensing electromagnetic radiation, a rotatable member, and a motion encoder as in claim 1.

15. (Currently amended) A motion encoder for determining rotational movement of a rotatable member, the motion encoder comprising:

a source of electromagnetic radiation;

a detector for sensing electromagnetic radiation; and

an element located in a path between the source and the detector, wherein the element comprises multiple sets of electromagnetic radiation transmissions, each set comprising a plurality of areas having respectively different electromagnetic radiation reflection characteristics for reflecting respective different amounts of electromagnetic radiation from the source to the detector, wherein the areas are arranged to provide a directionally unique sequence of transmission characteristics along the path traced on rotation of the rotatable member, and wherein the sets form multiple repetitive sequences about the element.

16. (Previously presented) A mobile communications device comprising a display and a user input, wherein the user input comprises a rotatable member and a motion encoder as in claim 15.

17. (Currently amended) A motion encoder comprising:

a source of electromagnetic radiation;

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a detector for sensing electromagnetic radiation; and

a rotatable member located in a path between the source and the detector, wherein the rotatable member comprises multiple sets of electromagnetic radiation transmissions, each set comprising a plurality of electromagnetic radiation affecting surfaces having respectively different electromagnetic radiation affecting characteristics for affecting transmission of electromagnetic radiation from the source to the detector into respective different amounts of electromagnetic radiation, wherein the surfaces are arranged to provide a directionally unique sequence of transmission characteristics along the path when the rotatable member is rotated, and wherein the sets form multiple repetitive sequences about the element.

18. (Previously presented) A mobile communications device as in claim 14 wherein the rotatable member is located on the front face of the device.

19. (Previously presented) A mobile communications device as in claim 16 wherein the display and the rotatable member are located on a front face of the device.